MECHANISMS OF VASODILATATION

Rochester, Minnesota
July 10-12, 1986

A MEETING HELD
IN HONOR OF
DR. JOHN T. SHEPHERD

Scientific Sessions (Willow Creek Junior High School)

Session 1: Vascular Smooth Muscle

1:00-2:55 p.m.	Plenary session: D.F. Bohr and A.P. Somlyo, chairmen
1:00-1:05	D.F. Bohr (USA): Introductory remarks
1:05-1:15	P. Bellemann (FRG): Dihydropyridine receptors in hypertension
1:15-1:25	T. Bolton (UK): Calcium currents in various smooth muscle
1:25-1:35	C.Y. Kwan (Canada): Cell membranes and regulation of cytoplasmic levels of Ca^{2+}
1:35-1:45	R. Casteels (Belgium): Regulation of cytosolic Ca^{2+}
1:45-1:55	K. Hermsmeyer (USA): Ionic transport and membrane channels
1:55-2:05	H. Kuriyama (Japan): Phosphatidylinositol-turnover
2:05-2:15	J.C. Stoclet (France): Inhibition of calmodulin and vasodilatation
2:15-2:25	W.R. Kukovetz (Austria): Cyclic GMP and tolerance to nitrates
2:25-2:35	J.A. Bevan (USA): Functional changes in arteries as they get smaller
2:35-2:45	J.H. Lombard (USA): Relaxation in hypertensive vascular smooth muscle
2:45-2:50	A.P. Somlyo: Conclusion
2:55-4:00	Discussion around posters (and coffee)

1. Aaronson, P., Lang, R.J. and Bolton, T.B. Calcium currents in isolated rabbit ear artery cells.
2. Ambrosioni, E., Borghi, C., Boschi, S., Costa, F.V. and Mussi, A. Intracellular Na^+/K^+ content and postexercise vasodilatation in young normotensives with or without family history of hypertension.
3. Bellemann, P. and Garthoff, B. Modulation of dihydropyridine receptors in hypertension.
4. Bevan, J.A. Functional changes in arteries as they get smaller.
5. Borh, P.L., Claes, V.A., Okuyama, H. and Brutsaert, D.L. Relaxation and spontaneous activity in coronary resistance vessels.
6. Casteels, R. Regulation of the cytoplasmic calcium in smooth muscle.
7. Cohen, R.A. and Weisbrod, R.M. Can vasoactive substances released during intravascular thrombosis influence coronary adrenergic nerves?
8. Duprez, D., De Buyzere, M. and Clement, D.L. Influence of [illegible] on the peripheral circulation in patients with moderate essential hypertension.
9. Feletou, M. and Vanhoutte, P.M. Endothelium-derived [illegible] and membrane potential of vascular smooth muscle.
10. Flavahan, N.A. and Vanhoutte, P.M. Functional antagonism, receptor reserve and vascular heterogeneity.
11. Gah, D. and Bronson, A. Calcium and the loss of vascular reactivity to norepinephrine in obstructive jaundice.
12. Godfraind, T. and Alosachie, I. Endothelium modulation of vasoconstriction.
13. Hermsmeyer, K., Sturek, M. and Rusch, N. Vasodilatation via ion transport and ion channels.
14. Hwa, J.J. and Bevan, J.A. Different stereoselectivity requirements for effects of the 1,4-dihydropyridine (PN 200-110) on myogenic and high K^+ tone in the rabbit ear resistance artery.
15. Jovalecky, R.L., Senaratne, M.P.J. and Kappagoda, C.T. Lack of effect of nicardipine on the endothelium-dependent relaxation of rabbit aorta to acetylcholine.
16. Knight, D.R. and Vatner, S.F. Comparison of the effects of nitroglycerin and nitroprusside on coronary and systemic hemodynamics in conscious dogs.
17. Kukovetz, W.R. and Holzmann, S. Vasodilatation and tolerance to nitrates.
18. Kuriyama, H., Hirata, M., Itoh, T., Ueno, H., Hashimoto, T., Kanmura, Y. and Sumimoto, K. Inositol triphosphate related actions in pharmacomechanical coupling in vascular smooth muscle tissues.
19. Kwan, C.Y. and Daniel, E.E. Role of vascular muscle cell membranes in regulating cytoplasmic level of Ca^{2+}.
20. Lamb, F.S. and Webb, R.C. Serotonin-induced relaxation and calcium activated potassium efflux channels in dog femoral vein.
21. Modena, M.G., Benassi, A. and Mattioli, G. Impact of the vasodilating effect of amrinone in the improvement of myocardial performance.
22. Mulvany, M.J. and Nielsen, H. Activation of intracellular calcium stores in the contractile response of resistance vessels to noradrenaline.
23. Paul, R.J., Wuytack, F., Raeymaekers, L. and Casteels, R. Energy metabolism in vascular smooth muscle: the coupling of Ca^{2+} uptake and glycolysis in a plasma membrane vesicle preparation.
24. Peiper, U. Vibration-induced smooth muscle relaxation is mainly caused by contractile dis-coupling.
25. Poon, D.A. and Mathew, G.M. Alpha-adrenoceptor-mediated increase in tension and efflux of [illegible]Rb in dog saphenous vein.
26. Ratz, P.H. and Murphy, R.A. Role of myosin phosphorylation [illegible] in activation of smooth muscle.
27. Rusch, N.J. and Hermsmeyer, K. Calcium currents are different in vascular muscle cells from normotensive and spontaneously hypertensive rats.
28. Saxena, P.R., Duncker, D.J. and Verdouw, P.D. Mechanism of vasodilatation induced by 5-hydroxytryptamine.
29. Siegel, G., Stock, G., Lara, B., Chen, C. and Adler, A. The effect of prostacyclin on membrane potential and tension in polarized and depolarized vascular smooth muscle.
30. Sjöblom, N. Changes in norepinephrine sensitivity caused by changes of dextranosis and extracellular osmolality.
31. Stoclet, J.C., Schaeffer, P., Schwartz, P. and Lugnier, C. Inhibition of calmodulin and vasodilatation.
32. Williams, J.S., Bak, Y.H. and Schwartz, A. Interactions between calcium agonists and antagonists in coronary smooth muscle: Role of the endothelium.
33. Wolin, M.S. and Burke, T.M. Hydrogen peroxide elicits pulmonary vascular relaxation by a mechanism associated with activation of soluble guanylate cyclase.

Session 2: Vasodilator Peptides

4:00-5:30 p.m.	Plenary session, L. Vanner and D. Heistad, chairmen
4:00-4:20	C. Owman (Sweden): Overview: Peptidergic vasodilatation
4:20-4:30	L.O. Andersson (Sweden): Microvascular effect of neuropeptide [illegible]
4:30-4:40	J. Marshall (UK): Calcitonin gene-related peptide
4:40-4:50	J. Yaksh (USA): Vasoactive intestinal polypeptide
4:50-5:00	S.P. Duckles (USA): Release of multiple mediators: [illegible]
5:00-5:10	J.J. Lee (USA): Vasodilatation in cat brain
5:10-5:20	G. Wallin (Sweden): Sexually mediated vasodilatation in hairy skin of the human [illegible] induced by intraneural stimulation
5:20-5:30	R.A. Westerman (Australia): Vasodilator axon reflexes
5:30-6:30	Discussion around posters

34. Blumberg, H. and Wallin, B.G. Two types of neurally mediated vasodilatation in hairy skin of the human [illegible] induced by intraneural stimulation.
35. Burnstock, G. Regulation of vascular tone by purines.
36. Duckles, S.P. Evidence that capsaicin releases a vasodilator from guinea pig blood vessels which is not identical to substance P.
37. Ellis, J.J. Evidence suggesting that brain kinins may have a pathophysiological role in the cerebral circulation.
38. Faraci, F.M., Mayhan, W.G. and Heistad, D.D. Activation of a central vasodilator pathway during seizures in rats.
39. Iadecola, C. and Reis, D.J. Cerebral vasodilation elicited by neuropeptide [illegible]: a role for an intrinsic vasodilator pathway?
40. Lee, T.J.F. Neurogenic vasodilatation in cerebral arteries of the cat.
41. Marshall, I. and Craig, R.K. Calcitonin gene-related peptides are vasodilators.
42. Nobin, A., [illegible] and Owman, C. Neuropeptides and vasodilatation in human mesenteric blood vessels.
43. Owman, Ch., Hanko, J.E., Edvinsson, L. and Sundler, F. Coexistence and interaction between substance P and calcitonin gene-related peptide in central and peripheral vasodilatation.
44. Westerman, R.A., Low, A., [illegible], H.D., Magerl, W. and Szolcsanyi, J. Axon reflex flare evoked by electrical stimulation of cutaneous nerves in human skin.
45. Yaksh, T.L. and Go, V.L.W. Effects of vasoactive intestinal polypeptide antisera on changes in pial vessel diameter evoked by cortical stimulation.

6:30 p.m.	Transportation to Kahler Hotel

Friday, July 11 (Willow Creek Junior High School)

7:30 a.m.	Transportation from Kahler Hotel

Session 3: Atrial Natriuretic Factor

8:00-9:00	Plenary session: T. Di Perri and J.T. Shepherd, chairmen
8:00-8:05	A. Zanchetti (Italy): Introductory Remarks
8:05-8:15	E. Olbrich (USA): Atrial natriuretic factor and production of cyclic GMP
8:15-8:25	R. Winquist (USA): Heterogeneity in responses to atrial natriuretic peptides
8:25-8:35	J. De Mey (Belgium): Atrial natriuretic peptides and blood pressure
8:35-8:45	P. Bolli (Canada): Vascular effects of atrial natriuretic peptides in the human
8:45-8:55	J. Hedner (Sweden): Atrial natriuretic peptides in cardiovascular disease
8:55-9:45	Discussion around posters (and coffee)

1. Bolli, P., Muller, F.B., Raine, A.E.G., Erne, P., Resink, T.J., Linder, L. and Bühler, F.R. Atrial natriuretic peptide induces potent vasodilation in the human forearm and this is antagonized by noradrenaline.
2. De Mey, J.G. and Lenaers, A. Blood pressure lowering effect of atriopeptin III.
3. Hedner, L., Hedner, T., Petersson, A., Towle, A.C., Edwardsson, N., Swedberg, K., Nilsson, G., Persson, B. and Andersson, O.K. Atrial natriuretic peptide (ANP) and cardiovascular function in human subjects.
4. Olbrich, E.H. and Bielamatz, R.A. Characterization of the mechanism of action of atrial natriuretic factor in rabbit aorta and glomeruli.
5. Petersson, A., Hedner, J., Hedner, T., Kullman, S.L. and Towle, A.C. In vivo effects and release mechanisms of atrial natriuretic peptide in experimental animals.
6. Thompson, L.P. and Webb, R.C. Serotonin potentiates vascular relaxation to atriopeptin III and acetylcholine.
7. Winquist, R., Baskin, E., Faison, E., Wallace, A. and Schofield, T. Species differences in the vasorelaxation to atrial peptides.

Session 4: Catecholamines

9:45-11:55	Plenary session: W. Osswald and J. Reid, chairmen
9:45-9:50	J. Reid (UK): Introductory Remarks
9:50-10:10	L. Stjarne (Sweden): Overview: Feedback regulation of sympathetic neurotransmission
10:10-10:20	J.S. de la Lande (Australia): Vascular tone and disposal of norepinephrine
10:20-10:30	R. Zelis (USA): Adrenergic neurotransmission in heart failure
10:30-10:40	J.A.I. Marshall (UK): Catecholamines and the microcirculation
10:40-10:50	G.M. Drew (UK): Dopaminergic receptors
10:50-11:00	P. Soares da Silva (Portugal): Dopamine and renal adrenergic transmission
11:00-11:10	C. Rosendorff (South Africa): Hypertension and adrenoceptors
11:10-11:20	C.A. Hamilton (UK): Desensitization of alpha-adrenoceptors
11:20-11:30	N.A. Flavahan (UK): Receptor reserve and vascular responsiveness
11:30-11:40	M.J. Mulvany (Denmark): Alpha-adrenergic receptors and Ca^{2+} in resistance vessels
11:40-11:50	J.P. Hieble (USA): Alpha-adrenoceptor antagonists, a new approach to cardiovascular therapy
11:50-11:55	W. Osswald (Portugal): Conclusion
11:55-1:00	Discussion around posters (and lunch)

8. Bevan, O. Interaction of calcium and lithium on the adrenergic nerve ending.
9. Cohen, R.A. and Weisbrod, R.M. Can vasoactive substances released during intravascular thrombosis influence coronary adrenergic nerves?
10. Cooke, J.P., Flavahan, N.A., Shepherd, J.T. and Vanhoutte, P.M. Differential contribution of alpha$_1$- and alpha$_2$-adrenoceptors to contractile responses to norepinephrine in human limb arteries.
11. de la Lande, I.S., Venning, M.G. and Moore, R.J. Vascular tone and disposal of noradrenaline.
12. Drew, G.M. and Hilditch, A. Classification and subclassification of peripheral dopamine receptors.
13. Downing, G.J. and Macdonald, P.S. Endothelium-dependent vasodilatation: role of β-adrenoceptors, calcium and cytochrome P-450.
14. Flavahan, N.A. and Vanhoutte, P.M. Functional antagonism, receptor reserve and vascular heterogeneity.
15. Greenberg, S., Tanz, A. and Kruta, M. Evidence that cyclic GMP rather than cyclic AMP modulates adrenergic neurotransmitter release in mesenteric arteries.
16. Hamilton, C.A., Reid, J.L. and Dreyden, N. Rapid reversible agonist desensitization of alpha$_2$-adrenoceptors.
17. Hieble, J.P. and DeMarinis, R.M. Discovery of novel antihypertensive drugs via pharmacological differentiation of alpha-adrenoceptor subtypes.
18. Hughes, A., Thom, S., Redman, D. and Sever, P. Fenoldopam, a dopamine agonist, induces forearm vasodilatation by a mechanism independent of sympathetic activity.
19. Hyman, A.L. and Kadowitz, P.J. Neurogenic mechanisms in the pulmonary vascular bed.
20. Janssens, W.J. and Van Nueten, J.M. Amplifying effect of serotonin on contractions induced with norepinephrine is increased with age in isolated perfused kidneys of the rat.
21. Knight, D.R. and Vatner, S.F. Comparison of the effects of nitroglycerin and nitroprusside on coronary and systemic hemodynamics in conscious dogs.
22. Makhoul, R.G., Davis, W.S., Jr., Akbar, L.M., McCann, R.L. and Hagen, P.-O. Contractile response of vein bypass grafts to norepinephrine and serotonin.
23. Marquanas, E.J. and Bevan, R.D. Effect of denervation on the relaxation response in growing rabbit ear arteries.
24. Marshall, J.M. Dilator effects of sympathetic activity and catecholamines in the microcirculation.
25. Mulvany, M.J. and Nielsen, H. Activation of intracellular calcium stores in the contractile response of resistance vessels to noradrenaline.
26. Nyborg, N.C.B. Effect of ageing on the noradrenaline response of isolated rat coronary resistance arteries.
27. Poon, D.A. and Mathew, G.M. Alpha-adrenoceptor mediated increase in tension and efflux of [illegible]Rb in dog saphenous vein.
28. Rosendorff, C. and Horowitz, M.L. Dissociation of adrenergic receptor density from responses to adrenergic agents in a baboon model of hypertension.
29. Soares-da-Silva, P. Is there a dopaminergic vasodilator system in the mesenteric arterial bed?
30. Stjarne, L. Feedback regulation of sympathetic neurotransmitter secretion.
31. Van Nueten, J.M., Vanhoutte, R., Janssens, W.J., Schuurkes, J.A.J. and Janssen, P.A.J. Interaction between S_2-serotonergic and alpha$_1$-adrenergic receptors and control of blood pressure.
32. Vatner, D.E., Homcy, C.J. and Vatner, S.F. Beta$_1$- and beta$_2$-adrenergic receptor subtypes in bovine coronary artery.
33. Zelis, R. and Davis, D. Abnormal vascular sympathetic nerve function in heart failure.

Session 5: Serotonin

1:00-2:50 p.m.	Plenary session: R. Paoletti and G.M. Tyce, chairmen
1:00-1:05	R. Paoletti (Italy): Introductory remarks
1:05-1:15	R.C. Webb (USA): Serotonin and effect of other vasodilators
1:15-1:25	P.R. Saxena (The Netherlands): Vasodilator responses to serotonin
1:25-1:35	[illegible] (Australia): Prejunctional receptors for serotonin
1:35-1:45	R.A. Cohen (USA): Platelet-derived serotonin and the vascular wall
1:45-1:55	D.D. Heistad (USA): Responsiveness to serotonin in atherosclerotic blood vessels
1:55-2:05	J.M. Van Nueten (Belgium): Comparison of the serotonergic blocking properties of ritanserin and ketanserin
2:05-2:15	M. Hosta (Japan): CV-5197, a new S_2 serotonergic antagonist
2:15-2:25	J. Zanchetti (FRG): Serotonergic blockade by [illegible]
2:25-2:35	P. Gandoin (France): Plasma levels of serotonin in hypertensive patients
2:35-2:45	T. Hedner (Sweden): Serotonergic antagonism by ketanserin in human hypertension
2:45-2:50	G.M. Tyce (USA): Conclusion
2:50-3:45	Discussion around posters (and coffee)

34 [illegible], R.A. and [illegible], R.M. [illegible]

35 [illegible] "Lability" of the endothelium in the isolated, perfused [illegible] arterial bed of spontaneously hypertensive rats.

36 [illegible] W.P., Lamping, K.G. and Marcus, M.L. Endothelium and large coronary artery responses to 5-hydroxytryptamine in vivo.

37 Lambe?, A., Petersson, A., Hedner, T. and Persson, B. Effects of the serotonin antagonist ketanserin on sympathetic and vagal activity in the spontaneously hypertensive rat.

38 [illegible], P., Vallet?, D., [illegible], M., [illegible], P., [illegible] J.P. and Meyer, P. Do hypertensive patients have an increased plasma serotonin level?

39 Hedner, T., [illegible] K., Petersson, A. and Persson, B. Cardiovascular and platelet effects of serotonin (5$_2$) antagonists in human essential hypertension.

40 Heistad, D.D., Harrison, D.G., [illegible], B.P., Mark, A.L., Marcus, M.L. and Armstrong, M.L. [illegible] of atherosclerotic blood vessels.

41 Hirata, M., [illegible], T., Shibasaki?, Y., [illegible], Y., [illegible], C. and Sugihara, H. A selective serotonin S$_2$-receptor blocker, CV-5197, a benzoxazolinone analog.

42 Houston, D.S., Shepherd, J.T. and Vanhoutte, P.M. Mechanisms of platelet-induced responses of coronary arteries.

43 Janssens, W.J. and Van Nueten, J.M. Amplifying effect of serotonin on contractions induced with norepinephrine is increased with age in isolated perfused kidneys of the rat.

44 Lamb, F.S. and Webb, R.C. Serotonin-induced relaxation and calcium activated potassium efflux channels in dog femoral vein.

45 [illegible] R.G., Davis, W.S., Jr., Mikat, E.M., McCann, R.L. and Hagen, P.-O. Contractile response of vein bypass grafts to norepinephrine and serotonin.

46 [illegible], E.L., Phillips, C.A. and [illegible], J.K. 5-Hydroxytryptamine-induced presynaptic inhibition of sympathetic vascular tone in the dog common carotid arterial circulation.

47 Persson, B., [illegible], K., Petersson, A. and Hedner, T. Central serotonin receptor activation causes a reduction of blood pressure and heart rate in the rat.

48 Saxena, P.R., Duncker, D.J. and Verdouw, P.D. Mechanisms of vasodilatation evoked by 5-hydroxytryptamine.

49 Thompson, L.P. and Webb, R.C. Serotonin potentiates vascular relaxation to [illegible] III and acetylcholine.

50 Van Nueten, J.M., [illegible], R., Janssens, W.J., Schuurkes, J.A.J. and Janssen, P.A.J. Interaction between 5-hydroxytryptaminergic and α-adrenergic receptors and control of blood pressure.

51 White, S.W., [illegible], C.J., [illegible], W.J. and Moore, P.G. Central nervous [illegible] and 5-hydroxytryptamine influence on baroreflex-evoked coronary vasodilatation in the dog.

52. Zander, J.F., Aarhus, L.L., Katusic, Z.S., Rubanyi, G.M. and Vanhoutte, P.M. Effects of 5-hydroxytryptamine on adrenergic nerves, endothelium and smooth muscle in isolated, canine blood vessels.

Session 6: Neurogenic Control of the Circulation

3:45-5:35 p.m.	Plenary session; F.M. Abboud and F. Bühler, chairmen
3:45-3:50	F.M. Abboud (USA): Introductory remarks
3:50-4:10	J.T. Shepherd (USA): Overview: Neurogenic control of blood vessels in human limbs
4:10-4:20	S. White (Australia): Central nervous modulation of reflex control
4:20-4:30	E. Feigl (USA): Reflex control of the coronary circulation
4:30-4:40	A. Hyman (USA): Neurogenic mechanisms in the pulmonary vascular beds
4:40-4:50	J.R.S. Hales (Australia): Control of cutaneous arteriovenous anastomoses
4:50-5:00	K. Pleschka (FRG): Control of the tongue circulation
5:00-5:10	L.B. Rowell (USA): Blood flow during exercise
5:10-5:20	A.L. Mark (USA): Nerve traffic during exercise
5:20-5:30	C.J. Mathias (UK): Reflex adjustments to digestion
5:30-5:35	F. Bühler (Switzerland): Concluding remarks
5:35-6:30	Discussion around posters (and appetizers)

53 Bannister, R., Bloom, S.R., da Costa, D., Fosbraey, P., Mathias, C.J. and Wood, S.M. Mechanisms of postprandial hypotension in chronic autonomic failure.

54 [illegible], H. and Wallin, B.G. [illegible] vasodilatation in hairy skin of the human foot induced by intraneural stimulation.

55 [illegible]

56 [illegible] Quantification of arterial geometry, wall [illegible] as a function of hemodynamics.

57 Feigl, E.O. Reflex control of the coronary circulation.

58 Flavahan, N.A. and Vanhoutte, P.M. Functional antagonism, enzyme reserve and vascular heterogeneity.

59 Hales, J.R.S. and [illegible], G.S. [illegible] of dilatation of arteriovenous anastomoses.

60 Hyman, A.L. and Kadowitz, P.J. Neurogenic mechanisms in the pulmonary vascular bed.

61 Knight, D.R. and Vatner, S.F. Comparison of the effects of nitroglycerin and nitroprusside on coronary and systemic hemodynamics in conscious dogs.

62 Mark, A.L., Victor, R.G., Seals, D.R. and Wallin, B.G. Mechanisms of sympathetic nerve responses to exercise: new insight from direct intraneural recordings in humans.

63 Mathias, C.J., da Costa, D., Fosbraey, P., Bloom, S.R., Wood, S.M. and Bannister, R. Mechanisms of postprandial hypotension in chronic autonomic failure.

64 Moore, P.G., [illegible], C.J., White, S.W. and [illegible], W.J. Modulation of baroreflex gain regulating coronary vasodilator responses by the central [illegible] agonist [illegible]

65 Pleschka, K. Tongue blood flow and thermoregulation.

66 Rowell, L.B., [illegible], R. and [illegible], R. Reflex control of muscle blood flow during exercise.

67 [illegible], T., [illegible], J. and [illegible], N. Neural control of portal venous volume during pressor and depressor reflexes.

68 Traystman, R.J., [illegible], M.J. and [illegible], D.S. Neurally mediated adrenal medullary vasodilatation during hemorrhagic hypotension.

69 Vatner, S.F. and Young, M.A. Regulation of large coronary arteries in conscious dogs.

70 [illegible]

71 White, S.W., [illegible], C.J., [illegible], W.J. and Moore, P.G. Central nervous [illegible] and 5-hydroxytryptamine influence on baroreflex-evoked coronary vasodilatation in the dog.

6:40 p.m.	Transportation to [illegible]
7:15	[illegible]
8:30	Return to Kahler Hotel

Saturday, July 12 (Willow Creek Junior High School)

7:30 a.m.	Transportation from Kahler Hotel

Session 7: Local Regulation of Blood Flow

8:00-9:25	Plenary session; R. Berne and L. [illegible], chairmen
8:00-8:05	R. Berne (USA): Introductory remarks
8:05-8:25	H. Kontos (USA): Overview: Oxygen-derived free radicals and control of the microcirculation
8:25-8:35	G. Siegel (FRG): Electro-physiological effects of hypoxia on vascular smooth muscle
8:35-8:45	O. Hudlicka (UK): Inorganic phosphate in skeletal muscle
8:45-8:55	F. Karim (UK): Adenosine in skeletal muscle
8:55-9:05	N.F. Voelkel (USA): Hypoxia and pulmonary circulation
9:05-9:15	R.J. Traystman (USA): Oxygen and control of cerebral blood flow
9:15-9:25	B. Robinson (UK): Autoregulation in the human forearm
9:25-10:30	Discussion around posters (and coffee)

1 [illegible] Theophylline and dipyridamole: the purinergic theory.

2 Gardiner, S.M. and Bennett, T. Does it matter where you measure intraarterial pressure when assessing the cardiovascular responses to vasodilators?

3 Hudlicka, O. and [illegible], F. Inorganic phosphate and regulation of blood flow.

4 Hwa, J.J. and Bevan, J.A. Different stereoselectivity requirements for effects of the 1,4-dihydropyridine (PN 200-110) on myogenic and high K$^+$ tone in the rabbit ear resistance artery.

5 Jackson, W.F. Lipoxygenase inhibitors decrease arteriolar O_2 reactivity.

6 [illegible], H. Contribution of histamine receptors to the changes in vascular response to acetylcholine in conditions of reactive hyperemia.

7 Johnson, P.C. and [illegible], M.A. The role of oxygen in arteriolar sympathetic escape.

8 Karim, F., Ballard, H.J. and Cotterrell, D. Contribution of adenosine to vasodilatation in active skeletal muscle.

9 Kontos, H.A. Oxygen radicals in the cerebral circulation.

10. Lombard, J.H. and Stekiel, W.J. Decreased relaxation of portal veins of spontaneously hypertensive rats in response to reduced PO_2.

11. Proctor, K.G. Extracellular adenosine and calculated intestinal blood flow during absorption.

12. Robinson, B.F. and Benjamin, N. Autoregulation in the human forearm: differing responses in hypertensive and normotensive subjects.

13 Siegel, G., Grote, J., Zimmer, K. and Adler, A. Hypoxia effects hyperpolarization and relaxation in canine vascular smooth muscle.

14. Sjöblom, N. Changes in norepinephrine [illegible] caused by changes of distension and extracellular osmolality.

15. [illegible], N. and [illegible], D. Urea - a metabolic factor, differentially modulating and modifying adrenergically mediated cardiovascular effects.

16 Voelkel, N.F., Chang, S., Sakai, A. and McDonnell, T. Pulmonary vasodilators.

17. Wilson, D.A., Hanley, D.F. and Traystman, R.J. Cerebral responses unresponsive to alterations in arterial O_2 content.

Session 8: Endothelium-Dependent Responses

10:30-11:50 a.m.	Plenary session; R.F. Furchgott and P.M. Vanhoutte, chairmen
10:30-10:50	R.F. Furchgott (USA): Overview: Three more years, and a lot of fun
10:50-11:00	S. Moncada (UK): Vasoactive substances produced by endothelial cells in culture
11:00-11:10	W. [illegible] (Australia): Release of relaxing factor from cultured human endothelial cells
11:10-11:20	L. Ignarro (USA): Endothelium-derived relaxing factors and soluble guanylate cyclase
11:20-11:30	T. Godfraind (Belgium): Cyclic GMP, endothelium and effect of alpha-adrenergic and calcium entry blockers
11:30-11:40	V. Dzau (USA): Vasoactive peptides produced by endothelial cells
11:40-11:50	W. Martin (UK): Blockade and potentiation of endothelium-derived relaxing factor(s)
12:00-1:30	Discussion around posters (and lunch)

18 Bény, J.-L., Brunet, P. and Huggel, H. Effect of endothelial relaxing factor(s) on the transmembrane potential of pig coronary arterial smooth muscle.

19 Dzau, V.J., [illegible], H., [illegible], L., Pratt, R. and Zetter, B. Endothelial production of vasoactive peptides.

20. Feletou, M. and Vanhoutte, P.M. Endothelium-derived factor(s) and membrane potential of vascular smooth muscle.

21 Furchgott, R.F., Khan, M.T., [illegible], J.L. and Jothianandan, D. Endothelium-dependent and -independent vasodilators in rat aorta and resistance vessels.

22 [illegible], W.E., [illegible], G.G. and [illegible], R. Release of relaxing factor from cultured human endothelial cells.

23 Godfraind, T. and [illegible], J. Endothelium modulation of vasoconstriction.

24 Ignarro, L.J., Wood, K.S., Harbison, R.G. and Kadowitz, P.J. Activation of purified lung soluble guanylate cyclase by endothelium-derived relaxing factor released from intrapulmonary artery and vein.

25 [illegible], R.L., [illegible], M.P.J. and [illegible], C.P. Lack of effect of [illegible] on the endothelium-dependent relaxation of rabbit aorta to acetylcholine.

26 Khan, M.T. and Furchgott, R.F. Kinetics of inactivation of endothelium-derived relaxing factor released from endothelial cells of rabbit aorta.

27 Martin, W., Smith, J.A., Henderson, A.H., Griffith, T.M. and Furchgott, R.F. Blockade and potentiation of endothelium-derived relaxing factor activity.

28 Moncada, S. Release of prostacyclin and endothelium-derived relaxing factor from vascular endothelial cells.

29 [illegible], C., [illegible], R., [illegible], V. and [illegible], J. Functional denudation of cerebral vascular endothelium by Triton X-100.

1:30-2:50 p.m.	Plenary session
1:30-1:40	R. Busse (FRG): Involvement of arachidonic acid and production of endothelium-derived relaxing factor
1:40-1:50	[illegible] and production of endothelium-derived relaxing factor
1:50-2:00	G.J. Dusting (Australia): Metabolism of arachidonic acid and production of endothelium-derived relaxing factor
2:00-2:10	[illegible]: Endothelium-dependent responses to histamine
2:10-2:20	S. Thom (UK): Endothelium-dependent responses to calcium gene-related peptide
2:20-2:30	[illegible]: Endothelium-dependent responses to bradykinin
2:30-2:40	E. Bassenge (FRG): Endothelial cells as oxygen sensors
2:40-2:50	G. Rubanyi (USA): Polarity of endothelial cells in releasing vasoactive factors
2:50-3:30	Discussion around posters (and coffee)

30 Bassenge, E., Busse, R., Pohl, U. and Holtz, J. Endothelium-mediated vasomotion: effects of various physicochemical stimuli.

31 Busse, R. and [illegible], U. Inhibitors of [illegible] stimulate the production of endothelium-derived relaxing factor.

32 Duckles, S.P. Evidence that capsaicin releases a vasodilator from guinea pig blood vessels which is not identical to substance P.

33 Dusting, G.J. and Macdonald, P.S. Endothelium-dependent vasodilatation: role of β-adrenoceptors, calcium and cytochrome P-450.

34 [illegible], L.P., [illegible], H. and [illegible], H. The cyclooxygenase cytochrome P-450 pathway.

35 [illegible] relaxes human [illegible] arteries through endothelium.

36 Houston, D.S., Shepherd, J.T. and Vanhoutte, P.M. Mechanisms of platelet-induced responses of coronary arteries.

37 [illegible], T. and [illegible], J. Histamine-induced release of endothelium-derived relaxing factor from human umbilical blood vessels.

38 [illegible], A.L., [illegible], R.A. and Peach, M.J. Phospholipase activation by [illegible] releases prostacyclin and an endothelium-derived relaxing factor from rabbit aorta.

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39. Ohlstein, E.H. and Berkowitz, B.A. Characterization of the mechanism of action of atrial natriuretic factor in rabbit aorta and glomeruli.
40. Rubanyi, G.M. and Vanhoutte, P.M. Polarity of the release of endothelium-derived relaxing factors.
41. Thom, S., Hughes, A., Martin, G. and Sever, P. Calcitonin gene-related peptide: in vitro endothelium-dependent dilatation of human arteries and in vivo vasodilatation in the forearm vascular bed.
42. Itano, H. Effects of bradykinin on isolated veins of dogs and rabbits.

1:30-5:15 p.m. Plenary session

3:30-3:40 M.A. Young (USA): Endothelium-dependent responses in the conscious dog.
3:40-3:50 G. Kaley (USA): Endothelium-derived relaxing factors in microcirculation.
3:50-4:00 B.M. Altura (USA): Endothelium-dependent relaxations and the reticulo-endothelial system.
4:00-4:10 A. Herman (Belgium): Hypercholesterolemia and release of endothelium-derived relaxing factor(s).
4:10-4:20 D.G. Harrison (USA): Atherosclerosis and endothelium-dependent responses.
4:20-4:30 L. Criscione (Switzerland): Hypertension and endothelium-derived relaxing factor.
4:30-4:40 T.F. Luscher (Switzerland): Hypertension and endothelium-derived contracting factors.
4:40-4:50 N. Toda (Japan): Heterogeneity of endothelium-dependent responses in coronary arteries from different species.
4:50-5:00 W.P. Dole (USA): Endothelium-dependent responses to serotonin in large coronaries in vivo.
5:00-5:10 P. Ganz (USA): Endothelium-dependent responses in coronary vascular disease.
5:10-5:15 P.M. Vanhoutte (USA): Where to go from here?
5:15-6:00 Discussion around posters.

43. Altura, B.M., Gebrewold, A. and Burton, R.W. Endothelial-dependent dilatation and host defense events of the reticulo-endothelial system.
44. Criscione, L. and Powell, J.R. "Lability" of the endothelium in the isolated, perfused mesenteric arterial bed of spontaneously hypertensive rats.
45. Dole, W.P., Lamping, K.G. and Marcus, M.L. Endothelium and large coronary artery responses to 5-hydroxytryptamine in vivo.
46. Frank, G.W. Differential reduction of endothelium-dependent relaxation responses in monocrotaline-induced rat pulmonary hypertension.
47. Ganz, P., Lichtlen, P.L., Alexander, R.W., Shenk, E.L., Wayne, R., Mudge, G.H. and Selwyn, A.P. Impaired endothelium-dependent coronary dilation in patients with coronary artery disease.
48. Harrison, D.G., Freeman, P.C., Mitchell, G.G., Armstrong, M.L. and Heistad, D.D. Atherosclerosis significantly impairs vasoactive responses to a variety of humoral agents.
49. Herman, A.G., Van Deer, M. and Verlooren, T.J. Lipoxygenase metabolites of arachidonic acid cause contractions and relaxations of isolated canine blood vessels.
50. Hynes, M.R. and Duckles, S.P. Effects of aging on vasodilatation in the rat vasculature.
51. Kaiser, L. and Sparks, H.V. The effect of hemodilution on flow dependent dilation in the canine femoral artery.
52. Kaley, G., Wolin, M.S. and Messina, E.J. Endothelium-derived relaxing factors in the microcirculation.
53. Luscher, T.F., Ran, L. and Vanhoutte, P.M. Functional properties of the vascular endothelium in experimental hypertension.
54. Manganiu, E.I. and Bevan, R.D. Effect of denudation on the relaxation response in growing rabbit ear arteries.
55. Moyhan, W.G. and Heistad, D.D. Disruption of the blood-brain barrier in cerebrum and brainstem during acute hypertension.
56. Miller, V.M. and Vanhoutte, P.M. Chronic increases in blood flow enhance endothelium-dependent relaxation of canine blood vessels.
57. Thom, S., Hughes, A., Martin, G. and Sever, P. In vitro pharmacological responses of human coronary arteries.
58. Toda, N. Heterogeneous responses to histamine of human, monkey and dog coronary arteries.
59. Vanhoutte, P.M., Luscher, T.F., Cooke, J.P., Houston, D.S. and Neves, R. Endothelium-dependent relaxations in human peripheral and renal arteries.
60. Vatner, S.F. and Young, M.A. Regulation of large coronary arteries in conscious dogs.
61. Verlooren, T.J. and Herman, A.G. Effect of hypercholesterolemia on endothelium-dependent relaxations and release of endothelium-derived relaxing factor in isolated rabbit arteries.
62. Young, M.A. and Vatner, S.F. Enhanced myocardial vasoconstriction and reversal of epicardial vasodilation with removal of the dog artery endothelium in conscious dogs.

6:00-6:05 p.m. P.M. Vanhoutte: Concluding remarks and "Au revoir"

6:10 Transportation to Kahler Hotel
7:30 Transportation from Kahler Hotel
8:00 Closing Banquet, Rochester Country Club

Tickets will be for sale at the registration desk until 6:00 p.m. on Friday, July 11.

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